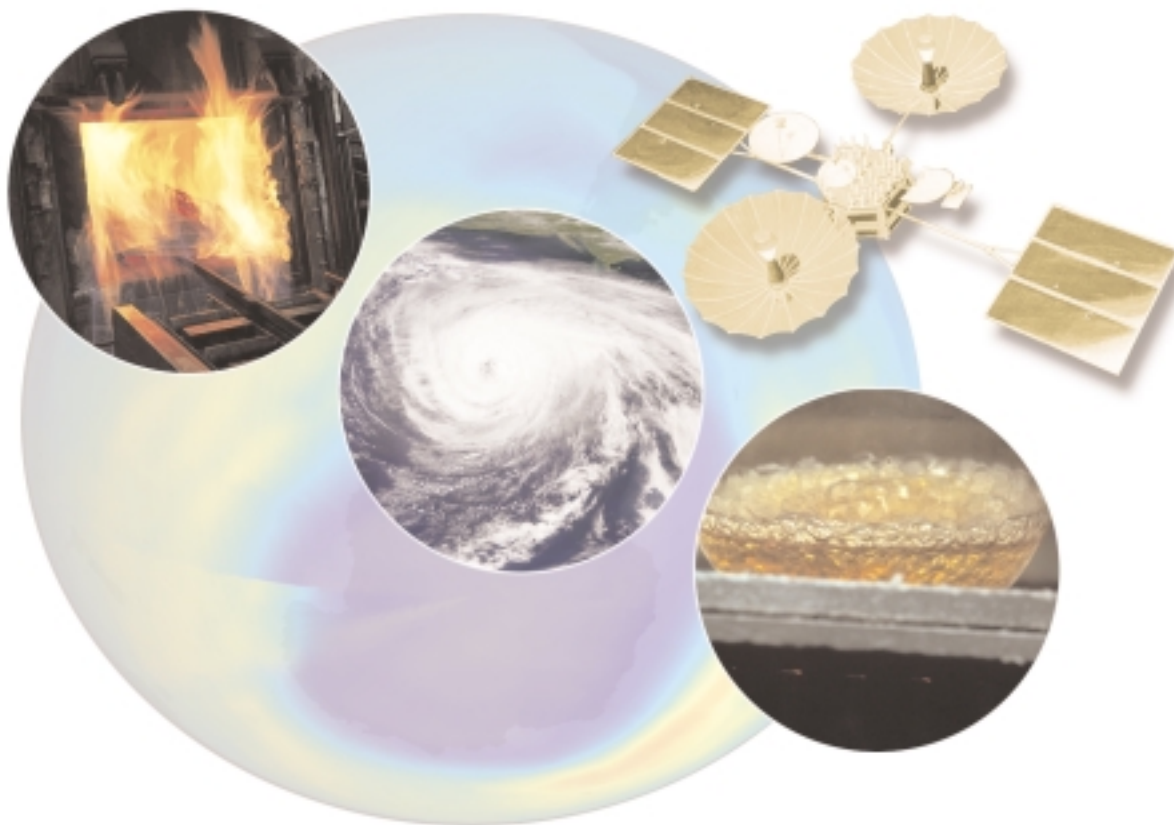


High-accuracy, multiple uses

Polarization Enhanced Thermal Radiometer



Accuracy, ease of use, and flexibility are some of the key features of an advanced radiometer developed recently by **NASA Stennis Space Center**. The polarization enhanced thermal radiometer has the potential to enhance industrial infrared (IR) readings and related applications in a number of ways. The radiometer offers excellent measurement accuracy and highly reliable calibration capabilities in a simple and relatively inexpensive unit. Designed by NASA for use in remote satellite thermal imaging, the polarization enhanced thermal radiometer offers a powerful new tool for industrial thermal measurements, as well as for making precision calibrations to existing IR devices.

Benefits

- **Highly accurate**—Thermal resolution and accuracy to better than 0.1 kelvin; system offers near theoretical emissivity value for calibration purposes
- **Simple**—Compact, portable, and inexpensive non-contact thermal radiometer and calibration source
- **Easy to use**—Easily applied to existing radiometers or a fully-integrated NASA radiometer is available
- **Multiple uses**—Thermometry for remote sensing and calibration of other IR devices, including blackbody calibration sources; many other potential industrial uses





The Technology

Designed for use in providing ground-based verification of remote satellite thermal measurements in the far IR region, the polarization enhanced thermal radiometer enables highly accurate IR thermometry by virtually eliminating emissivity-induced errors in a non-contact radiometry measurement. Because the polarization enhancement provides an absolute emissivity value from a water measurement, the NASA radiometer also enables highly accurate calibration of blackbody sources and other IR devices.

NASA Stennis Space Center's polarization enhanced radiometer can be used for temperature measurement and calibration applications in the long-wave infrared (LWIR) region, 8 to 12 microns. Adding the polarization enhancement feature to existing IR radiometers is relatively inexpensive.

Commercial Opportunity

The polarization enhanced thermal radiometer is part of NASA's technology transfer program, which seeks to stimulate commercial use of NASA-developed technologies. NASA has applied for patent protection for the radiometer, and prototypes are under development. NASA invites companies to consider licensing this technology for use in commercial applications. The complete polarization enhancement radiometer system is available for licensing, or certain elements can be individually licensed as upgrades to existing radiometers.

Commercial Applications

Process Control

- Chemical/petrochemical
- Power generation
- Aerospace
- Materials

Quality Control

- Calibration
- Verification

Research

- Satellite and aerial remote sensor calibration
- Agricultural monitoring
- Military applications

For More Information

If you are interested in commercialization opportunities or in learning more about this technology, please contact

Commercial Technology Program

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Register your interest in this technology online at

<http://technology.ssc.nasa.gov>